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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Brandt *et al.*

Title: PHARMACOLOGICALLY ACTIVE  
ANTIVIRAL PEPTIDES AND METHODS  
OF THEIR USE

Appl. No.: 09/777,560

Filing Date: 2/06/2001

Examiner:

Art Unit: 1646

<b>CERTIFICATE OF MAILING</b> I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on the date below.  Mark A. Kassel (Printed Name)   (Signature)  July 25, 2001 (Date of Deposit)
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**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Submitted herewith on Form PTO-1449 and presented below is a listing of documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 C.F.R. §1.56. A copy of each listed document is being submitted to comply with the provisions of 37 C.F.R. §§1.97 and 1.98.

**U.S. PATENT DOCUMENTS**

<u>DOCUMENT NUMBER</u>	<u>DATE</u>	<u>NAME</u>
5,104,854	4/14/92	Schlesinger <i>et al.</i>
5,182,265	1/26/93	Bruzzese <i>et al.</i>
5,260,420	11/9/93	Burnouf-Radosevich <i>et al.</i>
5,380,727	1/10/95	Déziel <i>et al.</i>
5,645,849	7/8/97	Pruss <i>et al.</i>
5,700,780	12/23/97	Beaulieu <i>et al.</i>

## OTHER DOCUMENTS

- G. Wagner and J. Oehlke, "Mercaptopurin-Protein-Azokonjugate," Pharmazie 32 157-162, 1977.
- R. V. Srinivas *et al.*, "Antiviral Effects of Apolipoprotein A-I and Its Synthetic Amphipathic Peptide Analogs," Virology 176, pp. 48-57, 1990.
- S. K. Srinivas *et al.*, "Membrane Interactions of Synthetic Peptides Corresponding to Amphipathic Helical Segments of the Human Immunodeficiency Virus Type-1 Envelope Glycoprotein," J. Biol. Chem. 267(10), pp. 7121-7127, April 1992.
- C. Wild *et al.*, "A Synthetic Peptide Inhibitor of Human Immunodeficiency Virus Replication: Correlation Between Solution Structure and Viral Inhibition," Proc. Nat'l. Acad. Sci. USA 89, pp. 10537-10541, November 1992.
- D. Derossi *et al.*, "The Third Helix of the Antennapedia Homeodomain Translocates Through Biological Membranes," The Journal of Biological Chemistry 269(14), pp. 10444-10450, April 1994.
- C. Wild *et al.*, "Peptides Corresponding to a Predictive  $\alpha$ -Helical Domain of Human Immunodeficiency Virus Type 1 gp41 are Potent Inhibitors of Virus Infection," Proc. Nat'l. Acad. Sci. USA 91, pp. 9770-9774, October 1994.
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- Y-Z. Lin *et al.*, "Inhibition of Nuclear Translocation of Transcription Factor NF- $\kappa$ B by a Synthetic Peptide Containing a Cell Membrane-Permeable Motif and Nuclear Localization Sequence," The Journal of Biological Chemistry 270(24), pp. 14255-14258, June 1995.
- J. Brugidou *et al.*, "The *Retro Inverso* Form of a Homeobox-Derived Short Peptide is Rapidly Internalized by Cultured Neurones: A New Basis for an Efficient Intracellular Delivery System," Biochemical and Biophysical Research Communications 214(2), pp. 685-693, September 1995.
- D. Derossi, "Antennapedia Homeodomain Third Helix as a Peptide and Oligonucleotide Vector," Restorative Neurology and Neuroscience 8, pp. 17-18, 1995.
- S. Rothmund *et al.*, "Recognition of  $\alpha$ -Helical Peptide Structures Using High-Performance Liquid Chromatographic Retention Data for D-Amino Acid Analogues: Influence of Peptide Amphipathicity and of a Stationary Phase Hydrophobicity," Journal of Chromatography A 689, pp. 219-226, 1995.
- C. Brandt *et al.*, "Evaluation of a Peptidomimetic Ribonucleotide Reductase Inhibitor with a Murine Model of Herpes Simplex Virus Type 1 Ocular Disease," Antimicrobial Agents and Chemotherapy 40(5), pp. 1078-1084, May 1996.
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- E. Krause *et al.*, "Conformation of a Water-Soluble  $\beta$ -Sheet Model Peptide," Int. J. Peptide Protein Res. 48, pp. 559-568, 1996.

J. Oehlke *et al.*, "Nonendocytic, Amphipathicity Dependent Cellular Uptake of Helical Model Peptides," Protein and Peptide Letters 3(6), pp. 393-398, 1996.

Q. Yao and R. W. Compans, "Peptides Corresponding to the Heptad Repeat Sequence of Human Parainfluenza Virus Fusion Protein are Potent Inhibitors of Virus Infection," Virology 223, pp. 103-112, 1996.

G. Elliott and P. O'Hare, "Intercellular Trafficking and Protein Delivery by a Herpesvirus Structural Protein," Cell 88, pp. 223-233, January 1997.

C. Yang and R. W. Compans, "Analysis of the Murine Leukemia Virus R Peptide: Delineation of the Molecular Determinants Which are Important for Its Fusion Inhibition Activity," Journal of Virology 71(11), pp. 8490-8496, November 1997.

J. Oehlke *et al.*, "Extensive Cellular Uptake into Endothelial Cells of an Amphipathic  $\beta$ -Sheet Forming Peptide," Federation of European Biochemical Societies Letter 415, 196-199, 1997.

L. T. Rimsky *et al.*, "Determinants of Human Immunodeficiency Virus Type 1 Resistance to gp41-Derived Inhibitory Peptides," Journal of Virology 72(2), pp. 986-993, February 1998.

M. Rojas *et al.*, "Genetic Engineering of Proteins with Cell Membrane Permeability," Nature Biotechnology 16, pp. 370-375, April 1998.

A. Phelan *et al.*, "Intercellular Delivery of Functional p53 by the Herpesvirus Protein VP22," Nature Biotechnology 16, pp. 440-443, May 1998.

S. Y. Hong *et al.*, "Identification and Characterization of Novel Antimicrobial Decapeptides Generated by Combinatorial Chemistry," Antimicrobial Agents and Chemotherapy 42(10), pp. 2534-2541, October 1998.

J. M. Kilby *et al.*, "Potent Suppression of HIV-1 Replication in Humans by T-20, a Peptide Inhibitor of gp41-Mediated Virus Entry," Nature Medicine 4(11), pp. 1302-1307, November 1998.

G. Aldrian-Herrada *et al.*, "A Peptide Nucleic Acid (PNA) is More Rapidly Internalized in Cultured Neurons when Coupled to a *retro-inverso* Delivery Peptide. The Antisense Activity Depresses the Target mRNA and Protein in Magnocellular Oxytocin Neurons," Nucleic Acids Research 26(21), pp. 4910-4916, 1998.

B. Böttcher *et al.*, "Peptides that Block Hepatitis B Virus Assembly: Analysis by Cryomicroscopy, Mutagenesis and Transfection," The EMBO Journal 17(23), pp. 6839-6845, 1998.

C. Du *et al.*, "Conformational and Topological Requirements of Cell-Permeable Peptide Function," J. Peptide Res. 51, pp. 235-243, 1998.

## **REMARKS**

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in

37 C.F.R. §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a prima facie prior art reference against the claims of the present application.

The listed document is being submitted in compliance with 37 C.F.R. §1.97(b). Therefore, Applicants believe no fee is required for this filing. However, the Commissioner is authorized to charge any fee due for this submission to Deposit Account No. 06-1447. For the purpose of charging said deposit account, a duplicate copy of this paper is enclosed.

Applicants respectfully request that the listed document be considered by the Examiner and formally be made of record in the present application and that an initialed copy of Form PTO-1449 be returned in accordance with M.P.E.P. §609.

Respectfully submitted,

Date July 25, 2001

By 

FOLEY & LARDNER  
150 East Gilman Street  
P. O. Box 1497  
Madison, Wisconsin 53701-1497  
Telephone: (608) 258-4272  
Facsimile: (608) 258-4258

Mark A. Kassel  
Attorney for Applicant  
Registration No. 38,200

Form PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. 032026-0460		SERIAL NO. 09/777,560	
<b>INFORMATION DISCLOSURE CITATION</b> (Use several sheets if necessary)				APPLICANT Brandt <i>et al.</i>			
				FILING DATE 2/06/2001		GROUP ART UNIT	
<b>U.S. PATENT DOCUMENTS</b>							
EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
		5,104,854	4/14/92	Schlesinger <i>et al.</i>			
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<b>FOREIGN PATENT DOCUMENTS</b>							
	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>							
		G. Wagner and J. Oehlke, "Mercaptopurin-Protein-Azokonjugate," <u>Pharmazie</u> 32 157-162, 1977.					
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EXAMINER

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